

WHAT IS CLAIMED IS:

1 1. A fluorine-containing allyl ether compound represented by the formula
2 1,



3

4 wherein R represents an organic group comprising at least one
5 fluorine atom and an alicyclic structure.

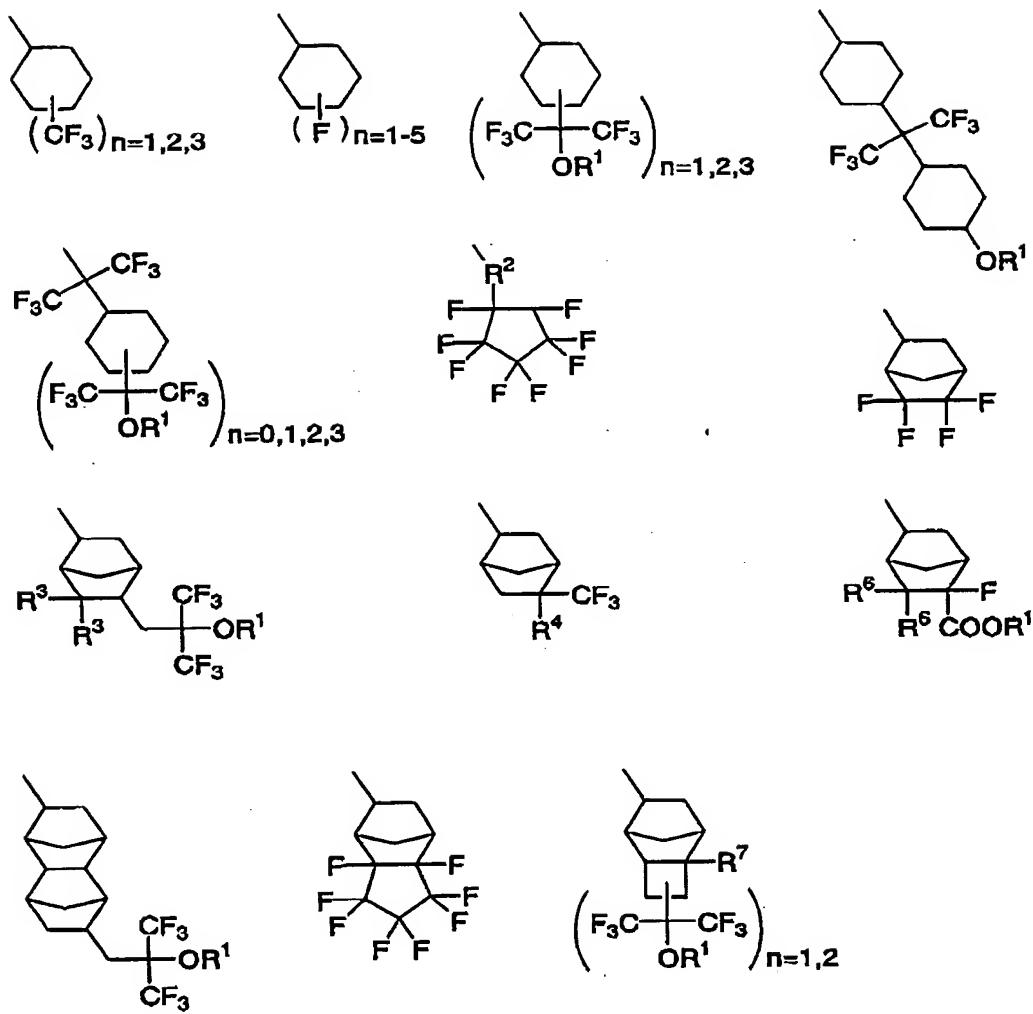
1 2. A fluorine-containing allyl ether compound according to claim 1,
2 wherein the alicyclic structure comprises a cyclohexane structure or
3 bicyclo[2.2.1]heptane structure.

1 3. A fluorine-containing allyl ether compound according to claim 1,
2 wherein the organic group R comprises a hexafluoroisopropanol group or unit
3 derived therefrom, which is represented by the formula 2,



4 wherein R¹ represents a hydrogen or alkyl group having a carbon
5 atom number of from 1 to 6 and optionally contains a heteroatom.

1 4. A fluorine-containing allyl ether compound according to claim 1,
2 wherein the organic group R is represented by one of the following formulas,



3

4 wherein R¹ is H or a C₁-C₆ alkyl group and optionally contains a

5 heteroatom;

6 R² is a C₀-C₅ alkyl group;

7 R³ is H or F; R⁴ is CF₃, OH, CO₂H, CO₂R⁵, or OCOR⁵ where R⁵ is a

8 C₁-C₆ alkyl group;

9 R⁶ is H or F; and

10 R⁷ is H or C₁-C₅ alkyl group.

1 5. A fluorine-containing copolymer comprising:

2 a first unit derived from a fluorine-containing allyl ether represented
3 by the formula 1; and
4 a second unit derived from a vinyl monomer,



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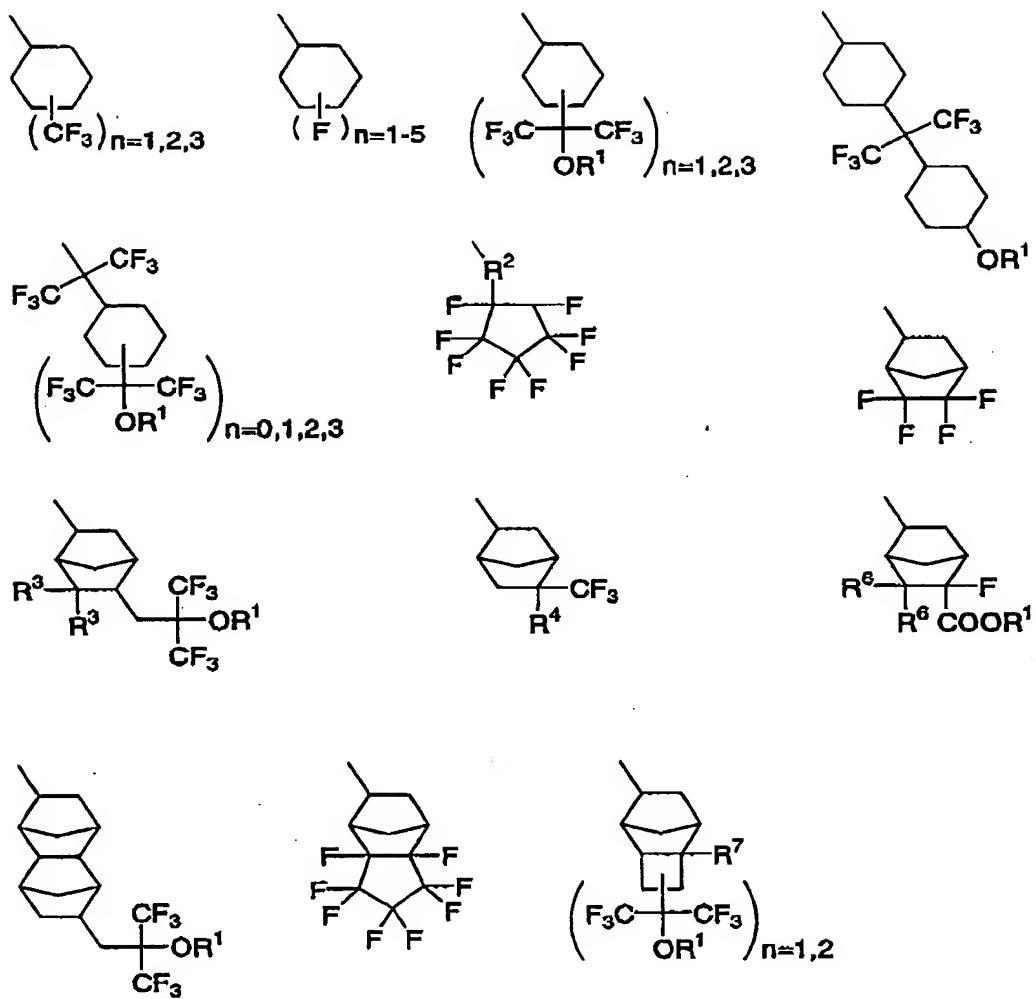
6 wherein R represents an organic group comprising at least one
7 fluorine atom and an alicyclic structure.

1 6. A fluorine-containing copolymer according to claim 5, wherein the
2 vinyl monomer is an α -trifluoromethyl acrylic ester.

1 7. A fluorine-containing copolymer according to claim 5, wherein the
2 vinyl monomer is an acrylic ester..

1 8. A fluorine-containing copolymer according to claim 5, further
2 comprising a third unit derived from a monomer containing a norbornene
3 structure.

1 9. A fluorine-containing copolymer according to claim 5, wherein the
2 organic group R is represented by one of the following formulas,



3

4 wherein R¹ is H or a C₁-C₆ alkyl group and optionally contains a
5 heteroatom;

6 R^2 is

7 B3 is H or F; B4 is CF₃, O

$\text{S} = \text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{CH}_3$ alkyl group;

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9 R-15 H or F, and

10 R' is H or C₁-C₅ alkyl group.

1 10. A resist composition comprising a fluorine-containing copolymer
2 according to claim 5.

1 11. An anti-reflection film material comprising a fluorine-containing
2 copolymer according to claim 5.